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Senator John McCain
Senate Commerce Committee
508 Senate Dirksen Office Building
Washington, D.C. 20510

Re: *April 13, 1999, Hearing on Access to Cable Platforms*

Dear Senator McCain:

Thank you for your staff's invitation to submit comments in connection with the Senate Commerce Committee's April 13, 1999, hearings on open access for Internet service providers and others to the cable television companies' new interactive broadband systems. This is an extremely important and timely issue.

I teach telecommunications law,[1] and I have recently completed a draft manuscript on the deployment of broadband access platforms and open access rules which will be published in an upcoming issue of the *Yale Journal on Regulation*. I argue that open access rules are both unnecessary and probably harmful in that they would decrease the incentives for developing broadband platforms in the first instance. In my view, neither Congress nor the FCC should now require open access to cable systems -- or other broadband access platforms. I here summarize my forthcoming article.

I. The Technological Hurdle to Advanced Telecommunications Services

In Section 706 of the Telecommunications Act of 1996, Congress provided that the FCC and state public utility commissions "shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans."[2] The technological barrier to

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[1]In the interests of full disclosure, I should note that before I entered law teaching I worked as outside counsel for AT&T on a number of matters. I had no involvement with AT&T's acquisition of TCI or other matters discussed in these comments, and I have no current relationship with AT&T (other than as its customer).

[2]Pub. L. 104-104, § 706(a), 110 Stat. 153 (1996).

the deployment of such "advanced services" is clear -- the so-called "last mile" of the telecommunications network. The "last mile" is that part of a communications network that connects an individual user to a central switching office or exchange. Currently, the telephone network is the only truly ubiquitous, two-way communications network. In the telephone network, the last mile takes the form of the local telephone company's local loop: a twisted pair of copper wires running from the company's lowest-level switch to an individual customer's home or business.[3]

From its beginnings, the telephone network was engineered to carry voice conversations, which occupy a fairly narrow range of frequencies. And, while almost all of the switches and backbone transmission facilities have been upgraded to extremely high-speed digital technologies, the original copper local loops have remained in place. Current computer modems can send data over these copper lines at 56 kilobits per second (56 kbps), but those speeds represent the theoretical maximum and are too slow for advanced telecommunications services. The FCC has recently concluded that advanced telecommunications services require at least 200 kbps speeds; I believe that truly high-speed Internet access, video on demand, and interactive gaming require speeds closer to 1 Mbps (1 Megabit per second, or 1000 kbps).

II. The Possible Technological Solutions

In the past three years, numerous companies have begun to spend billions of dollars to deploy new technologies that promise to provide high-speed data services to residences and small businesses. The current leaders are probably the cable television companies, which are in the process of upgrading their plant to provide high-speed two-way services. This conversion requires the replacement of a significant portion of a cable system's plant. Nevertheless, several hundred thousand people currently subscribe to Internet access or other advanced services over cable systems, and cable companies expect to have all of their plant converted within the next several years.

But cable companies are not the only companies deploying new broadband access platforms. Local telephone companies are deploying Digital Subscriber Line (DSL) technologies that permit much higher data throughput. Deploying DSL generally requires the local telephone company to break the copper loop off from the voice switch in the central office and route the wire to a new piece of equipment -- a Digital Subscriber Line Access Multiplexer (DSLAM). A

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[3]This is the picture for most residences and small businesses -- the focus of Section 706's imperative to provide advanced telecommunications services "to all Americans." But larger businesses generally own their own switches (known as private branch exchanges or PBXs) and likely are served by arrangements other than a twisted pair of copper wires.

special modem, and perhaps other equipment, must be installed on the customer's premises, and sometimes the copper local loop must be modified to enable the DSL technology. Current estimates suggest that between 50 and 80 percent of all local copper wires can be upgraded in this manner to provide advanced telecommunications services. Most of the major incumbent local telephone companies have announced plans to deploy DSL services, and a number of competitive local telephone companies, taking advantage of their new interconnection rights under the 1996 Act, have announced such services as well.

In addition to these wireline technologies, the FCC has authorized several fixed wireless services that could provide high-speed Internet access and other broadband services to individual consumers. The most promising of these are the Multichannel Multipoint Distribution Service (MMDS) licensees and the new Local Multipoint Distribution Systems (LMDS) licensees. Because of the high frequencies used by these services, they are limited to areas in which an unobstructed line-of-sight can be found between the customer and the carrier's antenna. Moreover, companies deploying MMDS and LMDS are generally focusing on business customers as their initial markets. Nevertheless, current expectations are that at least 50% of households will be able to receive either MMDS or LMDS service.[4]

Finally, new satellites are being deployed in low- and medium earth orbits that may permit broadband services, but those services are somewhat further in the future.

III. Open Access Rules

As these new broadband access platforms have become closer to reality, Internet service providers and other content providers have begun lobbying for legal rules requiring the owners of these platforms to provide equal and open access to these platforms. For example, customers that order Internet access over the newly-merged AT&T/TCI or certain other cable systems must purchase that access through @Home, which is owned by AT&T/TCI and other cable companies. While customers can reach AOL or other companies through the @Home gateway, they must take @Home service. AOL and others such as the OpenNet coalition argue that the @Home service should be unbundled from the cable wires themselves, so that any Internet service provider or other company can sell access through the cable system. They argued that such conditions should be placed on AT&T's acquisition of TCI, but the FCC refused. They are now seeking legislation to impose such rules.

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[4]In addition to MMDS and LMDS, the FCC is currently exploring whether it should modify its rules to permit a service known as ultrawideband spread spectrum that has shown promise for providing high-speed, wireless broadband services.

A. The Current Law

Various kinds of open access rules, of course, have a long pedigree in telecommunications. In the 1960s and 1970s, the FCC mandated that the telephone companies permit the interconnection of subscriber-owned telecommunications equipment in order to introduce competition into that market. Later, the FCC required that telephone companies sell such customer equipment independently of communications services. Perhaps most dramatically, the key provision of the AT&T Consent Decree that ushered in competition in long-distance markets was the requirement that the local telephone companies provide "equal access" to all long-distance companies. The 1996 Act continued that equal access rule, and the 1996 Act's local competition provisions grant additional access rights as well.

Current law, however, does not necessarily require that owners of broadband access platforms provide open access. On the one hand, DSL services provided by the incumbent local telephone companies probably must be unbundled from any Internet or other information service, by virtue of the 1996 Act and certain FCC rules that have long required open access to elements of the local telephone network.[5] On the other hand, no current statute or rule requires cable television companies to grant open access to other Internet or information service providers.[6]

Those contending for open access rules argue that the owners of broadband platforms will " force" consumers to "pay twice" for the content the consumers actually want. They therefore draw an analogy to other open access rules to contend that consumer choice and competition will be enhanced if open access rules are applied.

B. Open Access Rules Are Unnecessary and Potentially Frustrate Congress's

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[5]*See generally* 47 U.S.C. § 251(c); Expanded Interconnection with Local Telephone Company Facilities, 7 FCC Rcd. 7369 (1992); Deployment of Wireline Services Offering Advanced Telecommunications Capability, Memorandum Opinion and Order and Notice of Proposed Rulemaking, CC Docket 98-147 (Aug. 7, 1998). The FCC must reassess many of its local competition rules following the Supreme Court's decision this January in *AT&T Corp.* v. *Iowa Utilities Board*, 119 S. Ct. 721 (1999). I think, however, that the text accurately describes the best interpretation of the statute.

[6]The issue of statutory interpretation (which has not been decided) is whether Internet and other interactive services provided over cable television plant constitute "cable services" under 47 U.S.C. § 522(6). If they do, then they are exempt from open access rules. 47 U.S.C. § 541(c). While others disagree, I believe that the statute is best read to include Internet and other services as "cable services." *See also* Barbara Espin, *Internet Over Cable: Defining the Future In Terms of the Past*, FCC OPP Working Paper Service No. 30, at 83, 88 (Aug. 1998).

Intent To Promote Deployment of Advanced Telecommunications Services

I believe that the arguments for open access rules on cable television systems are suspect for two reasons. First, the argument for open access relies on an implicit assumption that cable platforms will have persistent market power in the market for broadband access. To the contrary, I think it likely that more than one broadband access platform will prove technologically and economically successful within the next decade. Second, the advocates for open access rules have offered no economic theory to support their claim that owners of cable platforms would take anticompetitive actions that harm consumers.

1. The Possibility of Multiple Platforms

Those contending for open access rules assume that cable television platforms will have a persistent monopoly over broadband access services. As I have summarized above, however, a number of different technologies are capable of providing broadband access services, and numerous companies are beginning to deploy those services. In particular, the well-financed incumbent local telephone companies are aggressively announcing DSL deployments, and a number of new entrants are attempting to exploit wireless services.

The Federal Communications Commission has decided that it is too early to treat cable television platforms as natural monopolies, and this seems wise. The market should be given ample opportunity to test the viability of all of the available technologies. Moreover, open access rules would, at a minimum, decrease the incentives of information service providers to develop alternatives to cable platforms.

A successful alternative technology may constrain the cable companies, even if it is cable that provides service to most of the customers most of the time. Even in areas where only a single provider offers service, prices may be kept low by the prospect of quick entry by new competitors. Competitive local carriers and LMDS providers can move their assets relatively easily from market to market -- they need not, for example, bury new wire in the ground to provide service. As a result, their costs of entry and exit are relatively low, and that prospect alone provides a significant constraint on the market leader's ability to price discriminate or otherwise achieve supercompetitive profits.[7]

Finally, as I discuss in the next section (and at greater length in the article), open access rules may eliminate the returns necessary for cable companies (and others) to deploy broadband

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[7] *See generally* William J. Baumol, et al., Contestable Markets and the Theory of Industry Structure 290-93 (rev. ed. 1988).

access platforms in the first instance.

2. The Economics of Demand for Broadband Access

Even if cable companies will have market power over broadband access, the advocates of open access rules have not yet advanced any economic theory to suggest why or how the owners of broadband access platforms will use their ownership of those platforms to injure consumers. In fact, the most plausible economic theory suggests that cable television companies, even if they were to have an absolute monopoly over broadband services, would not restrict access in a way that would harm consumers.

One of the principal insights of economic analysis of antitrust law over the past twenty-five years is that a monopolist will rarely find it in its interest to attempt to "leverage" its monopoly into other markets. If a cable television monopolist attempted to injure consumers by restricting access to information services, that would simply decrease demand for the broadband access service itself. Of course, this general insight has been qualified in some respects, and there may be instances in which a monopolist would find it profitable to exclude competitors in other markets. Nevertheless, even these situations do not necessarily result in harm to *consumers*. Most importantly, the proponents of open access rules have provided no theory to explain why cable companies would attempt to injure consumers by "extending" the (alleged) cable monopoly to monopolize Internet access or other information services.[8]

Even the foregoing, however, does not take account of what I believe to be the most important reason that cable companies and other broadband access providers should not be subject to open access rules. As I discuss in my paper, I believe that the demand for broadband access platforms will be characterized by what economists call indirect network externalities. In other words, consumers do not demand broadband access simply in order to have a data connection capable of a high rate of throughput. Rather, consumers demand broadband connections because they demand the services that are available over those connections. Consumers want high-speed Internet access, video on demand, and similar services that need broadband connections.

Since the mid-1970s, a branch of economics has developed dealing with the peculiar demand effects occasioned by what are called "network" goods. A network exists when an

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[8]A monopolist subject to price regulation has different incentives, and may find it beneficial to engage in leveraging to recover profits it cannot receive in the regulated service market. But cable companies are not subjected to price regulation, and no one seems currently to suggest that their Internet services should be subjected to price regulation.

individual consumer's demand for a good depends upon the number of other consumers that also demand the good. When it does, the market is said to exhibit "network externalities."[9]

In the classic case of a network externality, a consumer's demand for the good increases based on the number of other purchasers of the good, because the good itself becomes more valuable to individual consumers as others also purchase that good. Consider telephone service. If I am the only person purchasing telephone service, it is not worth anything to me. It may be worth something to me to be able to call my parents, and something more if I can reach all of my relatives or all of my friends. The value of telephone service continues to increase (although not necessarily at a constant rate) as more other individuals (and businesses) subscribe to telephone service. This feedback effect gives rise to a "direct network externality."

A related form of network arises in markets in which there are so-called hardware and software goods. Hardware goods are those goods, usually durables, that provide the underlying technology for other goods or services. Software goods are those that provide the particular flavor of the good or service that the consumer demands. A common example is video cassette players: Consumers desire to watch movies. To do so, they need a video cassette player (a hardware good) and some prerecorded video tapes (the software goods). Other examples are computer operating systems and computer applications, turntables and records, and compact disc players and compact discs. These markets display network externalities if consumer demand for the hardware good is influenced by the variety of software goods that are compatible with the hardware. This will often be the case: consumers are more likely to buy the video cassette player that plays more of the available movies and are more likely to buy the operating system compatible with the widest variety of applications programs. But the supply and variety of software goods depends upon total consumer demand, and, hence, an individual consumer's value for the hardware good depends upon (and increases with) the number of consumers purchasing the same hardware good -- because a larger number of consumers purchasing the hardware good creates a greater market for (and hence a more diverse supply of) the complementary software goods. These sorts of network effects are referred to as "indirect network externalities."

The voice telephone network exhibits direct network externalities. But I believe that the market for broadband access services will exhibit *indirect* network externalities. Most residential purchasers of broadband access are not, in all likelihood, simply purchasing a higher speed

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[9]*See generally* Kenneth D. Boyer, *Network Externalities*, in Networks, Infrastructure, and the New Task for Regulation 13-17 (Werner Sichel & Donald L. Alexander, eds. 1996); Anne Perrot, *Compatibility, Networks, and Competition: A Review of Recent Advances*, 27 Transp. Sci. 62, 64-66 (1993); Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 Rand J. Econ. 70, 70-71 (1985); Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 Am. Econ. Rev. 424, 426-27 (1985).

connection for the purpose of sending and receiving particularized information at higher speeds, although some may do that. Rather, broadband access is merely a component of the overall package of goods they are purchasing: Internet access, video on demand, news services, interactive gaming, and other services. In this sense, broadband access and the related information goods are hardware and software goods. One of the leading telecommunications consulting and analysis firms, the Yankee Group, has written that "in the broadband service market, ... content is king. Specifically, content that requires a fat pipe is king. Therefore, the proliferation of bandwidth-intensive applications is ultimately the key to the significant adoption of broadband service."

Applying the insights from indirect network externalities models to broadband access suggests that open access rules are probably unnecessary and could be counterproductive.

First, especially in initial periods of deployment, broadband access providers must ensure a supply of complementary information services. If consumers view broadband access simply as a hardware good -- necessary to the functioning of information services and not a good to be purchased on its own -- then a broadband provider must either provide those goods itself or arrange for a source of supply. To the extent that there is risk involved in the deployment of the broadband technology, a provider will often find it more efficient to internalize the risk by developing the information services itself. Moreover, in early periods especially, the hardware provider must convince purchasers that there will be *some* complementary goods, and an efficient way to make that commitment is to guarantee supply oneself.

Second, aside from this early-mover problem, the producer of a hardware good has a strong incentive to permit entry into the market for the supply of software goods. This is because a consumer's demand for the hardware good increases with an increase in the variety of software goods. More precisely, the consumer's demand for the hardware good depends upon the consumer's expectations concerning the variety of software goods that will be available in equilibrium. However, a network owner that monopolizes the provision of complementary goods has a commitment problem. In equilibrium, a monopolist will always supply a smaller quantity of goods than a competitive market. Consumers know this, and because they must make some investment to switch to the technology in the first place, consumers will not purchase where the risk of later exploitation is too great. This applies to broadband access networks, because consumers must invest in equipment -- cable modems or wireless equipment and compatible computer peripherals -- in order to switch to the service.

Thus, a rational broadband access provider will not restrict its customers to accessing only information services provided by it. Rather, the broadband access provider has the incentive not to restrict the market for information services and the availability of those services to its subscribers *even if* the broadband access provider has a monopoly in the provision of broadband access. Where network effects are strong, as I believe they are in the provision of residential broadband access, even a monopolist will have the incentive to encourage a wide variety of

information services to increase subscribership.[10]

Third, and even more importantly, open access rules may decrease the broadband access provider's incentives to deploy the platforms in the first instance. A network owner's attempts to increase subscribership require it to sacrifice some of the potential returns from the platform, which raises the possibility that returns will be insufficient to ensure that the new network is deployed. This effect can be mitigated "if the network sponsor captures some of the benefits derived from a larger network. This can occur if the hardware supplied has a stake in the supply of software as well as hardware, either through vertical integration, a joint venture, or contract."[11] Given congressional and FCC policy to encourage the near-term deployment of broadband access platforms, an open access rule that limited a platform provider's ability to benefit from the increasing popularity of its platform seems counterproductive.

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So why do AOL, the OpenNet coalition, and others so vigorously assert the need for open access rules? The reason is obvious. With the advent of cable television and other broadband access platforms, the current providers might be replaced by new providers. Indeed, a cable system may decide that it can provide the services that consumers demand by contracting with other providers. But -- and this is the most important point -- simply because the providers change and some current Internet service providers find they cannot compete in the broadband market does not mean that *consumers* are hurt. It is on consumers that the Congress should focus, and the advocates of open access rules have yet to put forward a theory to explain why open access rules are necessary to protect consumers' interests.

Thank you for this opportunity to submit comments.

Very truly yours,

/s/

James B. Speta

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[10]Of course, the open access granted by the monopolist may not be as great as the access granted in a perfectly competitive market or under regulation. But, because of the need to ensure adequate returns to the owners of broadband access platforms, on balance open access rules are undesirable.

[11]Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. Econ. Persp. 93, 102 (1994).

Visiting Assistant Professor